IN THE SPECIFICATION OF U.S. PATENT NO. 5,855,004:

In Column 2, please replace the second full paragraph with the following:

Previous inventions that have tried to control sound effects for model locomotives have only utilized an electro-mechanical means to control the synchronized sound functions whereas the present invention controls all aspects using digital control of the following: sound, model locomotive speed, direction and special effects on-board. Another known system that relates to model trains is U.S. Pat. No. 5,174,216 to Miller et al. In the '216 patent, there is no means to execute sound effects at the model train enthusiast's discretion or to control speed, direction or other on-board special effects. The '216 patent also utilizes a single chuff sample for all speeds, that is controlled using an opto-sensor to define an on or off state. The opto-sensor simply controls one chuff sound effect no matter at what speed the model locomotive may be traveling. The speed simply determines the rate of the chuff. It cannot select from a set of speed sound effects that give a better simulation of different speeds and [work loads] work-loads. The present invention overcomes this deficiency by comparing the on-off rate of the sensor to the digital speed packet. Furthermore, the '216 patent makes use of a limited menu of bell, whistle or horn sound effects that are triggered through the use of a Hall effect and various [combination] combinations of magnets that are interpreted by a micro controller. The micro-controller then

determines which bell/horn whistle sound effects to play. This system relies upon magnets placed along the model railway at specific points. The '216 patent system does not allow for any random play-back or variance of the predetermined menu of sound effects. The '216 patent relies upon a variable AC or DC voltage to control the frequency of the steam chuff or the amplitude of the diesel throb. The previously mentioned variable track voltage is also used to supply current to the sound reproduction circuitry. Because of the variable nature of the power supply for speed control, in order to hear sound effects through all voltage ranges especially in the 0 to 5 volt range, a switchable power supply is needed to change between the track supplied power and a battery back-up contained within the model train locomotive or car.

In Column 4, please replace the second full paragraph with the following:

U.S. Pat. No. 4,341,982 to Lahti et al. makes use of a carrier control signal. This patent uses DC power for propulsion of the model locomotive motor and simply superimposes a selected modulated frequency on top of the DC power. The superimposed control signal is a [band width] band-width equal to the highest frequency of the carrier control signal which is equal to the highest selected carrier control address. This system's deficiencies include no easy way to change a locomotives address, limited in [band width] band-width for address range, operating characteristics of the motor controller are limited to: direction and deceleration only, and no provisions for additional features to be actuated remotely, such as

operation of a sound unit or special lighting effects.

In Column 5, please replace the second full paragraph with the following:

In an alternate embodiment of the sound storage section, the audio is digitized and compressed, and voice synthesis is used as steps in recording the information onto a digital EPROM for use with, for example, but not limited to a Yamaha YM3812 as a sound generator. For play-back, a digital to analog conversion is necessary to convert the digitized information into an analog [wave form] waveform. The preferred embodiment of the present invention uses an analog EEPROM that does not require any of these intermediate steps. So the present device simplifies the recording and playback operation for this type of application when used in the preferred embodiment.

In Column 6, please replace the second full paragraph with the following:

Certain Control Variables are also reserved for use by the sound aspects of the device. These Control Variables may be fixed in firmware or alternatively programmable by the hobbyist. These Control Variables allow an end user to tailor a model [locomotives's] locomotive's sound aspects to personal preferences often enhancing the operation of the device. By utilizing this particular feature, momentum effects may be replicated using steam or diesel sound effects. In addition, the volume may be adjusted remotely from the hand controller. In addition to the sound and motor control aspects, special effects may be controlled. These may be, but are not limited to, lights, different flasher beacons and

smoke effects. Each of the sound unit aspects that may be controlled by the model train enthusiast are addressed by specific groups of digital packets for specific sound units. In other words, any of the sounds or types of movement which a real locomotive make are now possible in the model world. The previously mentioned sounds and control of the model locomotive's propulsion may be executed in combinations or in a prescribed method of preference. All of the functions contained within the discretely addressed sound unit or units are accessed through a hand controller provided by a Digital Command Control manufacturer.

In Columns 6 and 7, please replace the paragraph extending from Column 6 into Column 7 with the following:

The first step in creating the sound effects for the present invention is to record the actual sounds of the animals, sound effects, steam or diesel locomotives. These sounds are mastered and edited for use in either configuration of the present invention. The sound effects that are used in the asynchronous sound module are then simply recorded onto the chip for recall using the enabling means of the Hall effect sensor or other types of sensors. In the Digital Command Control Configuration, the recording of the sound effects [is] are accomplished by recording all necessary sound effects from a specific type of actual locomotive, whether diesel or steam. When a specific diesel locomotive's sound characteristics are recorded and paired to a matching model, the distinct sound characteristics are carried over to the model setting, giving a unique sound to each locomotive. However, steam locomotives vary in

driver wheel arrangements and physical size. These two things determine their sound characteristics, so varying the steam locomotive types recorded will give each steam locomotive a distinct sound. So recording the different manufacturers' models gives the hobbyist the ability to pair the correct motor sound to its model instead of simply a generic sound as previously offered. In the Digital Command Control configuration, the recording of the sound effects are accomplished by recording all necessary sound effects from a specific type of actual locomotive for use with a model of the actual locomotive or within a given actual manufacturer's family of locomotives whether diesel or steam. These sound effects are then mastered, and their location in the sound memory is established. Their recall is then accomplished in the Digital Command Control embodiment of the present invention through the following steps using a steam locomotive as an example.

In Columns 7 and 8, please replace the paragraph extending from Column 7 into Column 8 with the following:

The samples made for the chuff sound effects may also be acquired for the locomotive's air brake pump to simulate different [work loads] work-loads. For example, when a steam locomotive is at rest, there are various hissing sounds, and the air pump cycles at a slow rate. However, when the speed of the locomotive increases, the hissing sounds change to a chuff sound. As previously mentioned, the chuff sounds increase in frequency and amplitude in the present invention. As the chuff changes, the air pump cycles increase in frequency as well due to the simulated increase in steam pressure.

These same digital packets which contain the information to select an appropriate locomotive sound effect based upon speed packets are also simultaneously used to select the appropriate motor speed for control of both aspects.

In Column 9, please replace the thirteenth full paragraph with the following:

Another advantage of the present invention is the use of multiple sound samples to emulate the change in speed and [work load] work-load.

In Column 12, please replace the first full paragraph with the following:

When any of the sensors or switches are activated, the sound module DAST.TM. analog chip 14 produces an output which is amplified through the audio amplifier 16 and subsequently passed through the compander 20 and finally to the speaker 22 as an audio output. The sound module analog storage chip 14 further includes internal memory for storing of particular sounds that may be supplemented with additional memory as illustrated at 36 in FIG. 4. The additional memory 36 allows for additional sounds and greater lengths of time for recording sounds on the sound module analog processing chip 14. An external microphone 38 may be connected as an input for recording of sounds on the chip 14. Alternatively, the DAST.TM. chip 14 is provided with a built-in microphone input for recording of sounds thereon.

In Column 12, please replace the fourth full paragraph with the following:

The second section of the present invention is the DAST.TM. analog sound effects chip and audio expander. The DAST.TM. analog sound effects chip is capable of storing between twelve seconds and 120 seconds of analog data in a non-volatile analog memory. Various audio messages can be programmed into the sound effects chip. The library messages are stored on, in a preferred embodiment, a digital [audio tape] audiotape. When the messages are programmed, the analog audio signal is played back at a pre-recorded level and sent through a compressor. A compander is used in the present invention which reduces the dynamic range of the signal before it is recorded into the chip. When the sound effects are played back from the chip, they are played back through an audio expander. The expansion does two things: the audio is expanded and the signal is restored to its original dynamic range; and when the audio is expanded, low-level audio noise in the system is attenuated giving an improved signal-to-noise ratio.

In Column 14, please replace the sixth and seventh full paragraphs with the following:

The digital signal whether input through J3 section 108 or J2 section 109 is half-wave rectified by D1 section 108, current limited by R3 108, and is annunciated by LED 1 section 108. It then enters a Schmitt trigger opto-isolator, (OPTO1) section 108. The opto-isolator provides a safety layer of isolation between the signals input and field wiring in the model setting. The Schmitt trigger aspect protects from data errors due to [low level] low-level digital noise. The digital signal exits the opto-isolator in

an inverted state and enters a micro-controller (IC1) through the Input No. 2 line section 101.

The micro-controller's speed is set by a Crystal (XTAL 1) section 102 and an [on board] on-board oscillator.

In Column 17, please replace the third full paragraph with the following:

If the data is deemed valid, it is first checked in section 507 to see if this was a baseline idle packet. Idle packets are part of the DCC standard and are often used for time delays. If an idle packet is detected, the software loops back to section 504 to begin receiving the next preamble, as no further action is required.

In Columns 17 and 18, please replace the last paragraph extending of Column 17 extending into Column 18 with the following:

Beginning with test section 508, if it is determined, this data is intended for any and all devices receiving the data; or as termed by the DCC standard, a broadcast command. If it is, a branch is taken at section 515. At the completion of the branch, the software is at section 521 of FIG. 12. The broadcast command data is tested to see if an emergency stop command has been issued at section 522. If an emergency stop command is detected, the appropriate actions are taken to [effect] affect an emergency stop of the model train locomotive section 523. The software then branches at section 524 back to FIG. 11 at section 514 to begin receiving a new preamble. If the broadcast command is not an emergency stop command, it is then tested to see if the present invention should be reset at section 525, termed a decoder reset by the DCC standard. If a

decoder reset command has been received, the decoder is reset in section 526. The software then branches at section 527 back to FIG. 11 at section 514 to begin receiving a new preamble. If the broadcast command is not a decoder reset command, then it may be a future command which may be handled in section 528 with the appropriate action being taken. The software then branches at section 529 back to FIG. 11 at section 514 to begin receiving a new preamble.

In Columns 18 and 19, please replace the last paragraph of Column 18 extending into Column 19 with the following:

Moving back to FIG. 11 at section 511, if the received data does not contain advanced operations information, it is tested to see if it is a baseline packet. If it is, the software branches at section 518 to FIG. 16 at section 550. In section 551, the address information contained within the received data is compared to the pre-programmed address of the present invention. If the addresses do not match, it is then known that the information was intended for some other device. The software then branches to section 552 back to FIG. 11 at section 514 to begin receiving a new preamble. If the addresses match, it is known that the information contained within the baseline packet is intended for this device. The baseline speed and direction information is extracted from the data in sections 553 and 554, respectively. The baseline packet can contain speed information in either 28 step medium or a 14 step coarse resolution. A configuration variable is checked to see which resolution is currently being used in section 555. If it is determined that a 28

speed step resolution is in effect at section 556, then the break points are set based upon 28 speed step resolution and the configuration variables reserved for break points at section 559. If it is determined that 14 speed step resolution is in effect, baseline [head lamp] headlamp data is extracted at section 557. Then, the break points are set based upon a 14 speed step resolution, and the configuration variables are reserved for break points at section 558. After the break points are set for either 14 or 28 speed steps, the software then branches at section 560 to FIG. 19 at section 578. Further detail will be offered later on FIG. 19.

In Column 19, please replace the third full paragraph with the following:

Referring back to FIG. 17, the next aspect of software deals with function #0. Function #0 is typically used to control a model train locomotive headlight. A configuration variable is checked to see if baseline operation is in effect in section 568. If it is, the previously extracted baseline [head lamp] headlamp data at 557 is used at section 569 to determine at section 570 if function #0 should be [On] on at section 571 or off at section 572. Referring now to FIG. 7, when function #0 should be on output line #9 on the micro-controller section 101 is brought to a digital "1" state. Output line #9 is connected to the gate of MOSFET transistor Q2 in section 106. If an external device is connected across pins 1 and 2 of J6, current flows through the external device, current limiting resistor R2, and MOSFET transistor Q2; hence, the device is on. When function #0 should be off, output line #9 on the micro-controller

section 101 is brought to a digital "0" state. Current ceases flowing through the external device, current limiting resistor R2, and MOSFET transistor Q2; hence, the device is off. Q2, R2, and J6 are in section 106. Referring back to FIG. 17, after the state of function #0 is set in sections 568-576, the software then branches at section 577 to FIG. 19 at section 578.

IN THE DRAWINGS:

As shown in red in the Annotated Sheets Showing Changes and the Amended Drawing Sheets in the attached Appendix, please correct the drawings as follows:

In FIG. 6, at reference numeral 25, replace "/EDM" with --/EOM--.

In FIG. 8B, in the area designated by reference numeral 202, on the line leading from reference letter "N" to reference number 10, replace "/EDM" with --/EOM--.

In FIG. 8C, in the area designated by reference symbols "IC5", replace "/EDM" with --/EOM--.